

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Cancelled)
2. (Previously presented) A method for optimizing selection of advertisements for transmission to a customer, comprising:
  - creating at least one customer profile for a possible recipient of advertisement data, said customer profile reflecting the recipient's interests in predetermined characteristics of the advertisement data;
  - creating an ad-attribute profile for each of said advertisements, said ad-attribute profile comprising a measure of uncertainty regarding said recipient's interest in each of said advertisements, wherein said measure of uncertainty is inversely related to a number of times said advertisement has been served;
  - computing an uncertainty-adjusted probability that said recipient will select each of said advertisements;
  - computing a value associated with said recipient choosing each of said advertisements; and
  - selecting the advertisement corresponding to a highest uncertainty-adjusted probability and a highest value.
3. (Previously presented) The method of claim 2, further comprising the step of serving the highest value advertisement to the recipient.

4. (Previously presented) The method of claim 2, wherein said ad-attribute profile further comprises a measure of a degree of content of said predetermined characteristics in said advertisements.

5. (Previously presented) The method of claim 2, wherein said at least one customer profile comprises one attribute for each of said predetermined characteristics.

6. (Cancelled)

7. (Previously presented) The method of claim 2, wherein said ad-attribute profile comprises one attribute for each of said predetermined characteristics.

8. (Previously presented) The method of claim 7, wherein said step of computing said value further comprises the following steps for each advertisement:

- (a) multiplying an attribute of said customer profile by a corresponding attribute of said ad-attribute profile to yield a product;
- (b) accumulating the product; and
- (c) repeating steps (a) and (b) for every attribute of said customer profile.

9. (Previously presented) The method of claim 8, wherein said step of computing said value further comprises the step of computing a value based on a predicted sequence of Web sites being accessed.

10. (Previously presented) The method of claim 9, wherein a value for an advertisement is lowered if a particular Web site is predicted to be shown in the future.

11. (Previously presented) The method of claim 2, wherein said step of computing said value further comprises:

adding a revenue amount associated with each of said advertisements to said value; and

subtracting a cost associated with each of said advertisements from said value.

12. (Previously presented) The method of claim 2, wherein the computed value equals a square root of the number of times said advertisement has been served.

13. (Previously presented) The method of claim 2, wherein said computing step further comprises computing a value, said value based on a predicted number of visitors to a predetermined number of Web sites.

14. (Previously presented) The method of claim 2, wherein said selecting step comprises:

selecting a predetermined number of advertisements corresponding to a highest value; and

storing an identifier for each advertisement in an ad queue.

15. (Previously presented) The method of claim 14, wherein an advertisement is served to a user from said ad queue.

16. (Currently amended) A method for optimizing selection of advertisements for customers, comprising:

creating a customer profile for a customer, the customer profile including customer attributes;

creating an advertisement profile for each of a plurality of advertisements, each advertisement profile including an expected revenue based on potential placement of the corresponding advertisement and a measure of uncertainty that is inversely proportional to a number of times said advertisement has been served;

for each advertisement, using the customer profile to determine an estimated probability that the customer will respond to the advertisement; and

selecting which of the plurality of advertisements to present to the customer based on an estimated value, which includes the probability of the customer taking a specified action, the expected revenue associated with such action, and the measure of uncertainty, ~~and any additional learning gained.~~

17. (Previously presented) The method of claim 16, wherein the selecting further includes:

calculating for each advertisement a projected value based on the estimated probability and the expected revenue; and

selecting the advertisement with the highest projected value.

18. (Previously presented) The method of claim 16, further comprising:

presenting the selected advertisement to the customer; and

collecting data regarding the customer's response to the advertisement.

19. (Previously presented) The method of claim 18, further comprising:  
updating the customer profile based on the collected data.
20. (Previously presented) The method of claim 16, wherein the customer attributes include long term attributes and short term attributes.
21. (Previously presented) A computer-implemented method for selecting Internet advertisements for presentation, comprising:  
establishing a customer profile for a customer, the customer profile including long-term attributes related to a category of advertisements of interest to the customer and short-term attributes related to a product of interest to the customer; and  
for an Internet advertisement,  
using the long-term attributes and the short-term attributes to compute a click probability estimate representing a likelihood that the customer will respond to the Internet advertisement,  
determining an uncertainty of the click probability estimate based at least in part on a number of times the Internet advertisement has been previously presented, and  
using the click probability estimate and the uncertainty to determine whether to present the Internet advertisement to the customer.
22. (Previously presented) The computer-implemented method of claim 21, further comprising:

adjusting the customer profile based on types of advertisements previously responded to by the customer.

23. (Previously presented) The computer-implemented method of claim 21, further comprising:

adjusting the customer profile based on Internet sites visited by the customer.

24. (Previously presented) The computer-implemented method of claim 21, further comprising:

presenting the Internet advertisement to the customer;

receiving a response to the Internet advertisement from the customer; and

updating the uncertainty based on the customer's response.

25. (Previously presented) A computer-implemented method for optimizing Internet advertising selection, comprising:

creating a customer profile corresponding to a customer;

establishing an advertisement profile for each of a plurality of advertisements, each advertisement profile including an expected revenue based on potential placement of the corresponding advertisement and a measure of uncertainty based at least in part on a number of times the corresponding advertisement has been placed;

for each advertisement, using the customer profile to determine an estimated probability that the customer will respond to the advertisement; and

selecting which of the plurality of advertisements to present to the customer based on the estimated probability of the customer responding to the advertisement, the expected revenue, and the measure of uncertainty.

26. (Previously presented) The computer-implemented method of claim 25, further comprising:

presenting a selected advertisement to the customer;  
receiving a response to the presented advertisement from the customer; and  
updating the measure of uncertainty based on the received response.

27. (Previously presented) The computer-implemented method of claim 26, wherein the response is a click selecting the advertisement.

28. (Previously presented) The computer-implemented method of claim 26, wherein the response is a request for more information.

29. (Previously presented) The computer-implemented method of claim 26, wherein the response is a purchase of an item in the advertisement.

30. (Previously presented) The computer-implemented method of claim 26, further comprising:

updating the customer profile based on the received response.